



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,493	11/25/2003	Manfred Rimkus	09038-US	6046
30680 7590 04/14/2008 DEERE & COMPANY ONE JOHN DEERE PLACE MOLINE, IL 61265				
EXAMINER				
HAMO, PATRICK				
ART UNIT		PAPER NUMBER		
3746				
MAIL DATE		DELIVERY MODE		
04/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/721,493

Applicant(s)

RIMKUS ET AL.

Examiner

PATRICK HAMO

Art Unit

3746

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to amendments filed on January 16, 2008.

Response to Arguments

Applicant's arguments filed January 16, 2008 have been fully considered but they are not persuasive. Notably, applicant argues that the limitation that the pump is for conveying of oil or coolant patentably distinguishes over the art of record. However, as noted below in line 7 of the rejection, Takano does in fact disclose a compressor that discharges coolant (refrigerant in the text of the reference). Therefore, the prior art of record still reads on the claimed limitations of the present application. See the rejection below for further details.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al., 5,867,996 in view of Suzuki et al., 6,742,350 and further in view of Hunt et al., 3,868,869.

Takano discloses a compressor control device including an engine 1, a motor 9 with a motor controller 18, a gearbox (the combination of 2, 3, 6, 7, 8, and 10), connected on its output side to a compressor 4 for compressing and discharging refrigerant or coolant (col. 2, ll. 15-17) and on its input side to the motor and engine, and sensors 20-22 and 26 for measuring the temperature of the air to be heated or cooled, sensor 24 measuring the vehicle velocity, the sensors inputting to electrical control unit 15 which outputs to the motor controller, and a further temperature setting input 23 for setting a target temperature. As noted in the previous action, in regards to the claimed limitation that the rotational speed of the drive engine can be varied, it is inherent that the engine cannot rotate forever, and that it can therefore be varied at least between on and off speeds.

Takano does not disclose the following claimed limitations: a free-wheeling device arranged between the auxiliary motor and the summing gearbox which absorbs a torque applied to the auxiliary motor, the drive arrangement further including at least one sensor for the measurement of the rotational speed of the drive engine, wherein the conveying performance of the conveying device can be controlled or regulated by controlling the auxiliary motor as a function of at least one magnitude of the condition of the medium and the rotational speed of the drive engine.

However, Suzuki teaches a hybrid compressor device with a compressor 130 driven by both an engine 10 and a motor 120, and an engine rotation speed sensor feeding into the control unit 160 (see fig. 1), whereby the operation of the motor is controlled by the control unit as a function of an air conditioning requirement signal, an

Art Unit: 3746

engine speed rotational signal, and an evaporator temperature sensor (col. 6, ll. 28-49) so that the production cost and size of the compressor can be reduced and that a cooling function can be ensured even when the vehicle engine is stopped (Abstract, ll. 9-12).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the compressor control device of Takano with the control unit of Suzuki so that a cooling function can be ensured even the vehicle engine is stopped.

Furthermore, Hunt teaches a free-wheel 33 arranged between an engine 10 or motor and a gearbox 20, which absorbs a torque applied to the auxiliary motor and prevents rotation of the gearbox in a reverse direction thereby protecting the gearbox and the engine by prohibiting unwanted reverse rotation (col. 2, l. 66 – col. 3, l. 5).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the combined compressor control unit of Takano in view of Suzuki with the free-wheel of Hunt in order to protect the motor of Takano.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above in view of Sakai et al., 6,234,769.

The references as applied to claim 1 above teach all the limitations substantially as claimed except for the following: the summing gearbox is a planetary summing gearbox, wherein the drive engine is connected with an internal gear, the auxiliary motor

is connected with a sun gear and the conveying device is connected with a planet carrier of the planetary summing gearbox.

Sakai teaches a hybrid compressor driven by an engine and a motor 100 (column 9, lines 11-15), a planetary gearbox 640 connected on its output side to a compressor 610 and on its input side to the motor and engine (see figure 8), the engine and motor connected to the sun gear and the compressor connected to the planet gears (see figures 8 and 10), and a one-way clutch so that the rotational driving force generated by the engine or motor is not transmitted from a shaft to a rotor and hence, the impact vibration is reduced (Abstract, ll. 1-9).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references as applied to claim 1 above with the engine/motor driven compressor of Sakai to reduce impact vibrations.

In regards to the claimed limitation that the drive engine connected to the internal gear, the auxiliary motor connected to the sun gear, and the compressor connected with a planet carrier of the planetary gearbox, this is a mere rearrangement of parts with respect to the invention of Sakai et al., and would not have substantially modified the operation of the device. Therefore, these limitations are held unpatentable. See MPEP §2144.04(6)(c).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above in view of Crook et al., 5,628,234.

The references as applied to claim 1 above teach all the limitations substantially as claimed except for the following: that a gear ratio stage is arranged between the drive engine and the drive engine side input of the summing gearbox arranged for a gear ratio increase or reduction or a reversal of the direction of rotation of the drive.

However, Crook teaches a gear ratio stage 110 between the motor 100 and transmission (see figure 1) that allows for gear reduction and reversal (column 2, lines 35-43).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the references as applied to claim 1 above to allow operation in either forward or reverse directions.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3683

/Patrick Hamo/
Patent Examiner, AU 3746